

RIVERS AND FLOODS, SEPTEMBER, 1912.

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The only flood in any of the larger rivers was that which occurred in the Wisconsin River during the first week of the month. This flood was the third of the summer of 1912, and was caused by excessive rains on the night of August 31. Flood stages were exceeded, and at Wausau, Wis., the crest stage was 12.6 feet, or 2.6 feet above the flood stage, at 8.30 p. m., September 1. Warnings were issued as usual, the first at 2 a. m., September 1, and a large amount of property was saved thereby. The loss, so far as could be ascertained, amounted to between \$50,000 and \$75,000. A more detailed account of the flood will be found in another portion of this review.

About 24 hours later, during the night of September 1-2, following a period of unusual heat, a series of violent local rainstorms swept over southwestern Pennsylvania and the Panhandle of West Virginia. All the smaller streams soon became raging torrents, and at least 20 persons were drowned. Railroads were put out of commission, bridges and houses were carried away, and the property losses were enormous. One estimate placed the losses at \$5,000,000, of which sum \$2,000,000 was credited to the railroads. These figures are probably somewhat

too large, but in any event the total losses doubtless amounted to several millions of dollars. These small floods caused a decided rise in the Ohio River, but not to flood stages. Pittsburgh reported a stage of 17.9 feet, 4.1 feet below the flood stage, at 3 a. m., September 4.

Heavy rains over the South Atlantic States on September 23 and 24, caused decided rises in the rivers of southern Virginia and the Carolinas, for which warnings were issued wherever necessary. Flood stages were not reached except in the Santee River, but as the rivers had previously been quite low, the warnings permitted the safeguarding of considerable property and live stock in the river bottoms.

Nothing of special interest developed over other river districts.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.